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MATERIAL MANAGEMENT

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BR3 Dismantling project

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SCK•CEN

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The BR3 pilot Project (10Me PWR)
Shut down in 1987 after 25 years of operation

The main achievements of the decommissioning project are :

- Full system decontamination of the primary loop in 1991
- Dismantling of the high active internals
- Construction and exploitation of efficient decontamination processes (MEDOC, ZOE..)
- Dismantling of the Reactor Pressure Vessel in 1999/2000
- Decontamination of the Steam Generator 2002
- Evacuation of the spent fuel 2002
- Still underway and continue up to 2008

Work Organization

Dismantling

Cutting

Sorting

Identification

Temporary storage

Treatment

Characterization

Evacuation

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Objective

- Tracability of material from production to evacuation

From the point of view of external services

- Asked by the regulatory authority
- Information flow between the exploitant and the contractant (others services)

Tracability

From the point of view of the exploitant:

- Improvement of decommissionning experience
- Allow the right treatment process in function of type material or component
- Allow the right evacuation route in function of the history of the material
- Allow the calculation of decomissionning cost

Tools

- History of the plant
- Inventory of material (components, circuits and building)
- Database
- QA program related to waste management
- Specific tools (weighting pallet jack,drum scanner,sticker)

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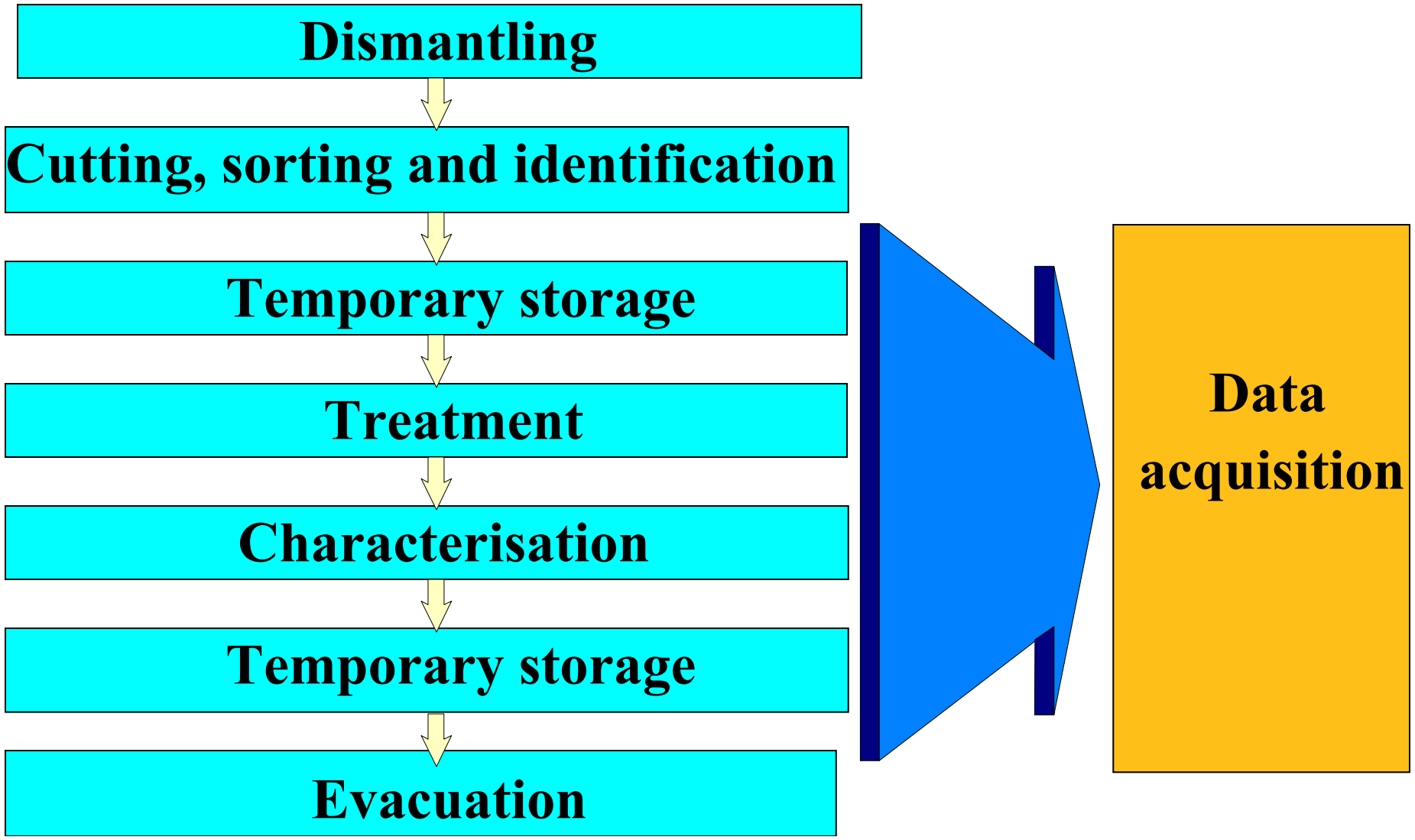
Working methodology followed during the actual dismantling



Creation of "batches"

- Batch : Group of materials which will follow the same evacuation route

- A batch can be:
  - 300 l container
  - 200 l drum
  - 400 l drum
  - Single large piece e.g. a reservoir

- Every batch carries a unique label
  - unique number
  - content of the batch

Identification of a BATCH

- Description
  - Dismantling instruction
  - Inventory records
  - Loop, pieces of …,
  - Dimensions - diameters
  - Type of material (stainless steel , carbon steel, painted, …)
  - Origin (area, place in area, …)

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Data acquisition

The content of a batch, its status and its location must be known at each moment..

⇒ All relevant information is on a label

⇒ All this information is put into a database including the location of the batch

Implementation of a Quality Assurance system

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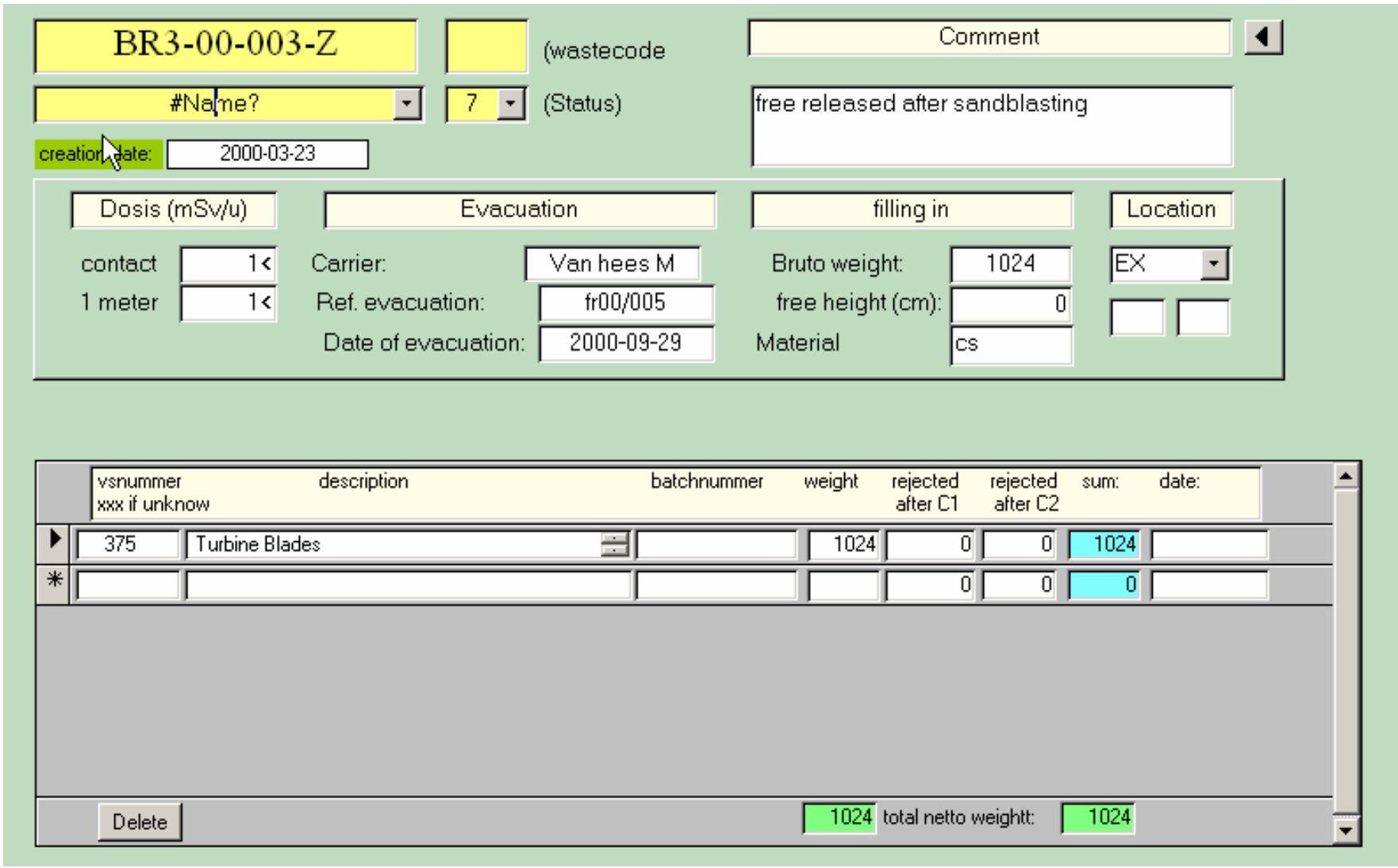
DATABASE



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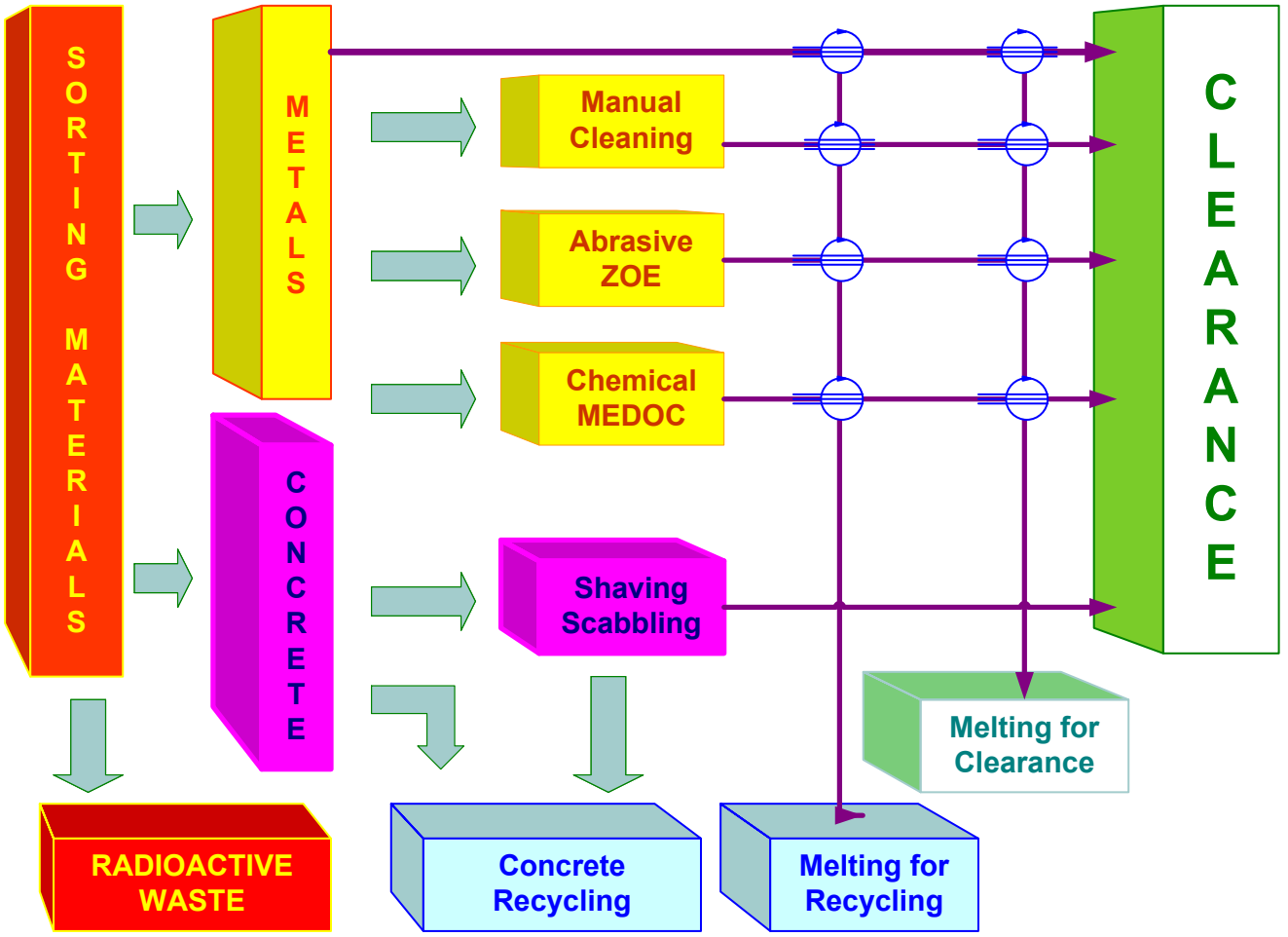
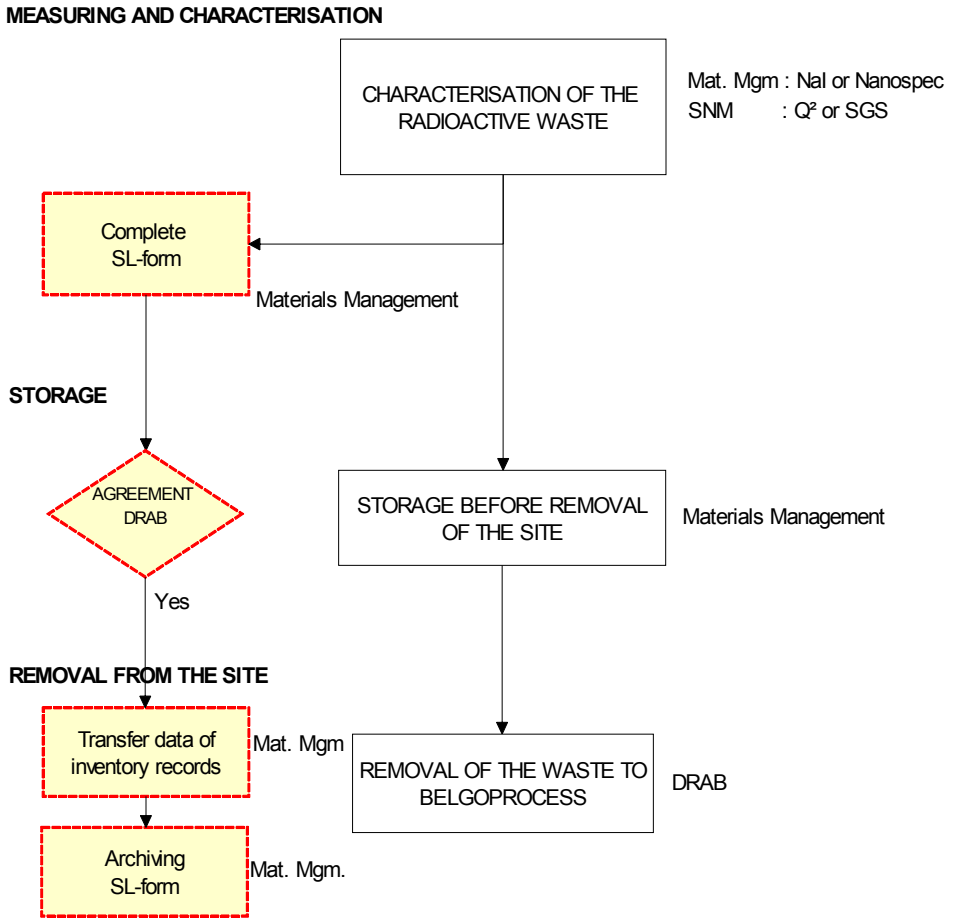
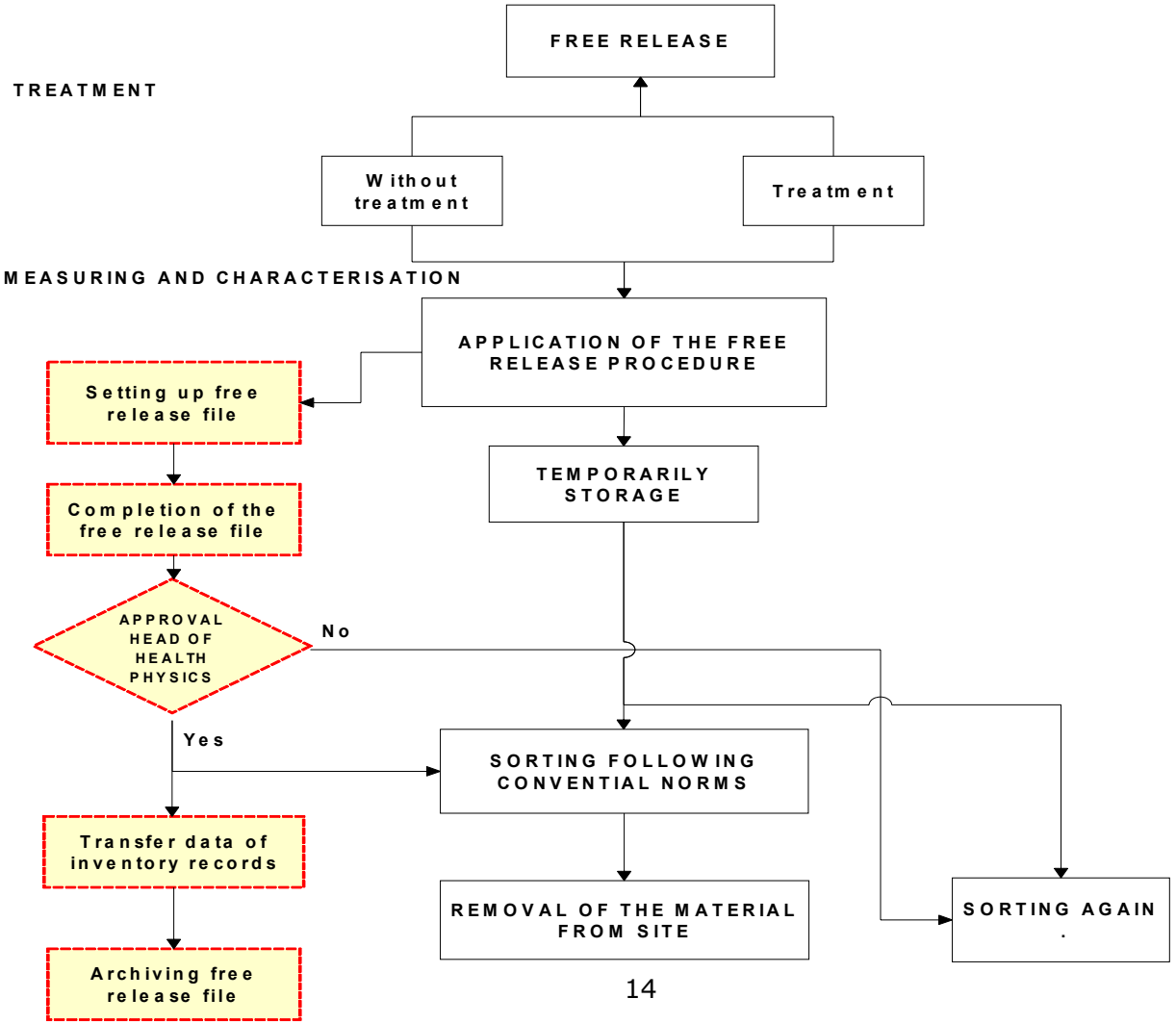
EVACUATION ROUTES



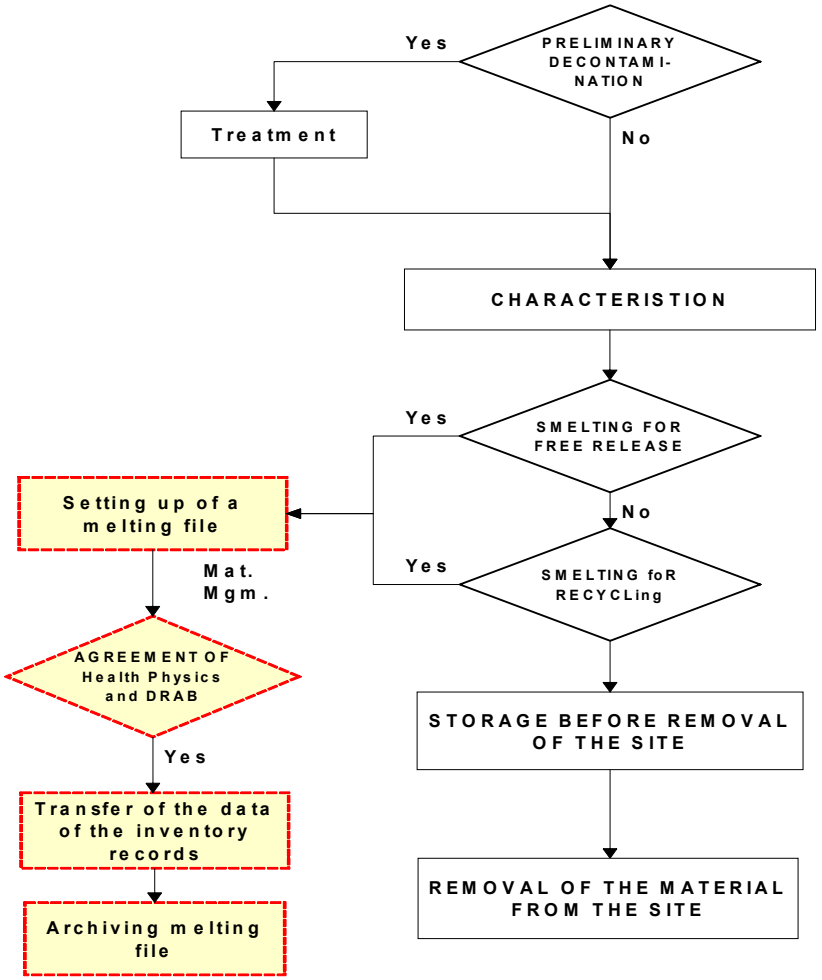
Evacuation of Radwaste



Evacuation of Free released materials



Evacuation to Melting Facility



AFTER EVACUATION

- UPDATING DATABASE
- UPDATING INVENTORY'S RECORDS